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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/562,797	12/29/2005	Susumu Kasukabe	500.45763X00	8707

20457 7590 04/24/2007  
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ARLINGTON, VA 22209-3873

EXAMINER
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ISLA RODAS, RICHARD

ART UNIT	PAPER NUMBER
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2829

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	04/24/2007	PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

# Office Action Summary

Application No.

10/562,797

Applicant(s)

KASUKABE ET AL.

Examiner

Richard Isla-Rodas

Art Unit

2829

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 09 February 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-23 is/are pending in the application.
- 4a) Of the above claim(s) 1-16 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 17-23 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 12/29/2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date 12/05, 12/06.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_.

## **DETAILED ACTION**

### ***Election/Restrictions***

1. Applicant's election without traverse of Group II, claims 17-23 in the reply filed on Jan 23, 2007 is acknowledged.
2. Claims 1-16 withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to nonelected Group I, there being no allowable generic or linking claim.

### ***Claim Objections***

3. Claims 17-19 objected to because of the following informalities:

In terms of claim 17, it appears that, in line 11, the claim should recite "a plurality" instead of "the plurality" so that proper antecedent basis is established. Appropriate correction is required.

Claims 18-19 are objected as they depend on objected claim 17.

### ***Claim Rejections - 35 USC § 112***

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 17-23 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In terms of claim 17, it isn't clear what the applicant means by "making the plurality of the contact terminals into contact with the electrodes..." For the purpose of

examining the claim, it will be assumed the applicant means "making the plurality of contact terminals contact the electrodes..."

Claims 18-19 are rejected as being dependent on claim 17.

In terms of claim 20 and 21, it isn't clear what the applicant means by "while making the plurality of the contact terminals in contact with the electrodes..." For the purpose of examining the claim, it will be assumed the applicant means "making the plurality of contact terminals contact the electrodes..."

Claims 22-23 are rejected as being dependent on claim 17.

### ***Claim Rejections - 35 USC § 103***

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 17-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over the US Patent to Dasse et al. 5,399,505 (Dasse hereinafter) in view of Liu et al. 5,177,439 (Liu hereinafter).

In terms of claim 17, Dasse teaches in Figure 7, a method of producing a semiconductor including the steps of building a circuit in a wafer (see steps 132 and 133), testing electrical characteristics of each semiconductor element (see step 137) and dicing and separating the wafer into semiconductor elements (see step 162 in Figure 8, the die are separated by a plurality of dicing lanes as explained in lines 26,

column 5). Dasse et al. substantially teaches the method steps except for the preferred structure with which to perform the step of testing. That is, Dasse teaches the method as claimed except for using a probe sheet including contact terminals surrounded by first and second metals that apply pressure to the device under test while testing.

However, it has been held that to be entitled to weight in method claims, the recited-structure limitations therein must affect the method in a manipulative sense, and not to amount to the mere claiming of a use of a particular structure. *Ex parte Pfeiffer*, 1962 C.D. 408 (1961). Therefore, unless the method claim recites how the use of such preferred probe sheet and contacts surrounded by metals affect the method in a way that the end result is different to that taught by the prior art, the limitations do not differentiate the claimed method from the method taught by the prior art.

Nevertheless, Liu teaches the use of such preferred structure. Liu shows in Figures 1 and 4, a probe sheet (32), including a plurality of contact terminals (41) in contact with the electrodes of the semiconductor element to be tested (see element 13 in Figure 1), a first metal film (22) formed to surround the contact terminals and a second metal film (33). Liu's device contacts the plurality of encapsulated semiconductor devices (7) by coupling (and thus exerting a degree of pressure) the contact terminals with the electrodes of the semiconductor devices. It would have been obvious to one of ordinary skill in the art at the time the invention was made, to choose the a readily manufacturable interface probe card as disclosed by Liu, to perform the method steps (testing) in the method taught by Dasse, in order to eliminate thermal

mismatch inherent in probe cards made from different material than the device under test, as suggested by Liu in lines 6-10 of column 2.

As to claim 18, Liu shows in Figure 1, the contact terminals (15) are truncated pyramidal.

As to claim 19, it must be noted that the method of forming a device is not germane to the issue of patentability of the device itself. Therefore, the preferred method of forming the pyramidal contacts in Liu's device, (which are used as the preferred structure to perform the method step of testing the electrical characteristics of the semiconductor element in Dasse's method) does not serve to differentiate the claimed method from the method taught in combination by the prior art. That is, the method of producing a semiconductor device that is tested during the process of its production, is not affected by whether the testing device used was molded on anisotropic holes etched of a crystalline board (as claimed), or wet etched directly from the semiconductor material (as taught by Liu in line 24-25 of column 5).

As to claims 20 and 21, Dasse teaches in Figure 7, a method of producing a semiconductor including the steps of building a circuit in a wafer (see steps 132 and 133), testing electrical characteristics of each semiconductor element (see step 137) and dicing and separating the wafer into semiconductor elements (see step 162 in Figure 8, the die are separated by a plurality of dicing lanes as explained in lines 26, column 5). Dasse et al. substantially teaches the method steps except for the preferred structure with which to perform the step of testing. That is, Dasse teaches the method as claimed except for using a probe sheet including contact terminals surrounded by

first and second metals that apply pressure to the device under test while testing. However, it has been held that to be entitled to weight in method claims, the recited-structure limitations therein must affect the method in a manipulative sense, and not to amount to the mere claiming of a use of a particular structure. *Ex parte Pfeiffer*, 1962 C.D. 408 (1961). Therefore, unless the method claim recites how the use of such preferred probe sheet and contacts surrounded by metals affect the method in a way that the end result is different to that taught by the prior art, the limitations do not differentiate the claimed method from the method taught by the prior art.

Nevertheless, Liu teaches the use of such preferred structure. Liu shows in Figures 1 and 4, a probe card (8), having a probe sheet (32), including a plurality of contact terminals (41) in contact with the electrodes of the semiconductor element to be tested (see element 13 in Figure 1), a first metal film (22) formed to surround the contact terminals and a second metal film (33). Liu's device contacts the plurality of encapsulated semiconductor devices (7) by coupling (and thus exerting a degree of pressure) the contact terminals with the electrodes of the semiconductor devices. It would have been obvious to one of ordinary skill in the art at the time the invention was made, to choose the a readily manufacturable interface probe card as disclosed by Liu, to perform the method steps (testing) in the method taught by Dasse, in order to eliminate thermal mismatch inherent in probe cards made from different material that the device under test, as suggested by Liu in lines 6-10 of column 2.

As to claim 22, Liu shows in Figure 1, the contact terminals (15) are truncated pyramidal.

As to claim 23, it must be noted that the method of forming a device is not germane to the issue of patentability of the device itself. Therefore, the preferred method of forming the pyramidal contacts in Liu's device, (which are used as the preferred structure to perform the method step of testing the electrical characteristics of the semiconductor element in Dasse's method) does not serve to differentiate the claimed method from the method taught in combination by the prior art. That is, the method of producing a semiconductor device that is tested during the process of its production, is not affected by whether the testing device used was molded on anisotropic holes etched of a crystalline board (as claimed), or wet etched directly from the semiconductor material (as taught by Liu in line 24-25 of column 5).

### ***Conclusion***

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. US Patents to Fjelstad et al. (6,586,955) and Mori (5,665,609).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Richard Isla-Rodas whose telephone number is (571) 272-5056. The examiner can normally be reached on Monday through Friday 8 am to 4:30 pm.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ha Nguyen can be reached on (571) 272-1678. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.



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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Richard Isla-Rodas  
April 5, 2007

  
VINH NGUYEN  
PRIMARY EXAMINER  
A.U.-2829  
04/16/07